

Work Order ID 155142

Monday, January 09, 2017 11:29:53 AM

155142

Page 1

Item ID: D350-604-041
Revision ID: URF 16-567
Item Name: Rear Locker Extender

Accept

N900040100

Setup Start ***NS1***
Stop ***NS2***

Start Date: 8/1/2017 Start Qty: 1.00 ***1***Required Date: 9/1/2017 Req'd Qty: 1.00 ***1***

Cust Item ID:

Customer:

Reference:

DAS 21
9-89Approvals: Process Plan: 21 Date: JAN 12 2017

QC: _____ Date: _____

Tooling:

Date: _____

SPC (Y/N): _____

Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2273

D350-604-041

L U/R

C U/R

100

Document Control

0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D350-604-041

CHG009

CHG010 **DAS 21 9-89** see attachment

DAS 27 9-89
SEP 21 2017

110

PURCHASING

0.00

110

Purchasing

Memo

0.00

Purchasing

Issue P/O:

Description: D350-604-041 Rear locker extender.

Manufacture as per dwg D2273

Supplier: FDC Composites Inc.

Certification of Conformity and process sheet required.

***EXTREME CARE MUST BE TAKEN TO PROTECT THE SURFACES OF
THE REAR LOCKER. THE SURFACES MUST BE SMOOTH AND FREE
FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR
DENTS.***

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

JAN 17 2017**DAS 13 8-89**

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																														
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155142

Page 2

N900040100

Setup	Start	*NS1*
	Stop	*NS2*

Start Date:	8/1/2017	Start Qty:	1.00	*1*
Required Date:	9/1/2017	Req'd Qty:	1.00	*1*

Cust Item ID:
Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run	Start	*NR1*
	Stop	*NR2*

**Insp.
Stamp**

0.00

120

0.00

Memo

Ensure a copy of Certification of Conformity and process sheet from Carbon-by-Design is attached.

*****DO NOT STACK REAR LOCKERS OR ANYTHING ON THEM*****

0.00

130

0.00

QC

Memo

Quality Control

Check hole locations to template. DT 8824 Check process sheet and audit.

0.00

140

0.05

Small Fab

Memo

Small Fab

1- INSTALL DECALS AS PER DWG

1X SP7-9-18

②

DAS
16
9-89

17/02/20

DAS
28
9-89

SEP 21 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
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								Lead hand / Supervisor Approval Verification	
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DQA: _____ Date: _____

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Work Order update only ☐

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OTHER :																																																															

Work Order ID 155142

Monday, January 09, 2017 11:29:53 AM

155142

Page 4

Item ID: D350-604-041

Accept

N900040100

Setup Start

NS1

Revision ID: URF 16-567

Item Name: Rear Locker Extender

Stop

NS2

Start Date: 8/1/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-604-041

Location: Eg 103
PPP Rev: _____DAS
27
9-89

SEP 21 2017

170

QC21- Final Inspection - Work Order Release

0.00

170

QC

Memo

0.02

Quality Control

um 17/9/25

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER :			

Picklist Print

Monday, January 09, 2017 11:29:56 AM

Page 1

Work Order ID: 155142

155142

Parent Item: D350-604-041

D350-604-041

Parent Item Name: Rear Locker Extender

Start Date: 8/1/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:Q03.12.01ReformatKJ/RF IPP REV:R
12.02.07 AS PER ECN12-521 DD verf:JLM IPP REV:S 12.04.04
AS PER DWG REV.B DD VERF:EC IPP REV:T 13.09.12 as per
CHG006/ECN13-616 DDVERF:JLM IPP REV:U 14.05.28 as per
chg008/ecn14-563 DD verf:JLM IPP REV:V 15.03.13 remove cam lock and
washerDD verf:JLM IPP REV:W 15.03.25 ECN15-545 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D350-604-041P

Purchased

No

110

Each

0.0000

1

1

D350-604-041P

Rear Locker Extender

**

1x SEP 17-9-18

D2268

Manufactured

No

140

Each

13.0000

1

1

D2268

Placard

**

DAS
27
9-89

Location

Loc Qty

Loc Code

ST006

13

B157834

1

SEP 21 2017

147069

7

6/13/2017

148553

6

7/22/2017

D2728-1

Manufactured

Yes

140

Each

-1.0000

1

1

D2728-1

Dart Logo Label Small

**

DAS
28
9-89

D2269

Manufactured

No

155

Each

8.0000

1

1

D2269

Placard

**

SEP 21 2017

Location

Loc Qty

Loc Code

ST006

8

B164004

1

SEP 21 2017

147070

2

6/13/2017

148588

6

7/22/2017

DAS
27
9-89

DAS
28
9-89

DQA: _____ Date: _____

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				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Monday, January 09, 2017 11:29:56 AM

Page 2

Work Order ID: 155142

155142

Parent Item: D350-604-041

D350-604-041

Parent Item Name: Rear Locker Extender

Start Date: 8/1/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

D5062-041

Manufactured No

155

Each

16.0000

1

1

D5062-041

Bracket Assembly

Location

Loc Qty

Loc Code

ST147

16

145920

16

SEP 21 2017

DAS
27
9-89

DAS
28
9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____ Work Order update only ☐

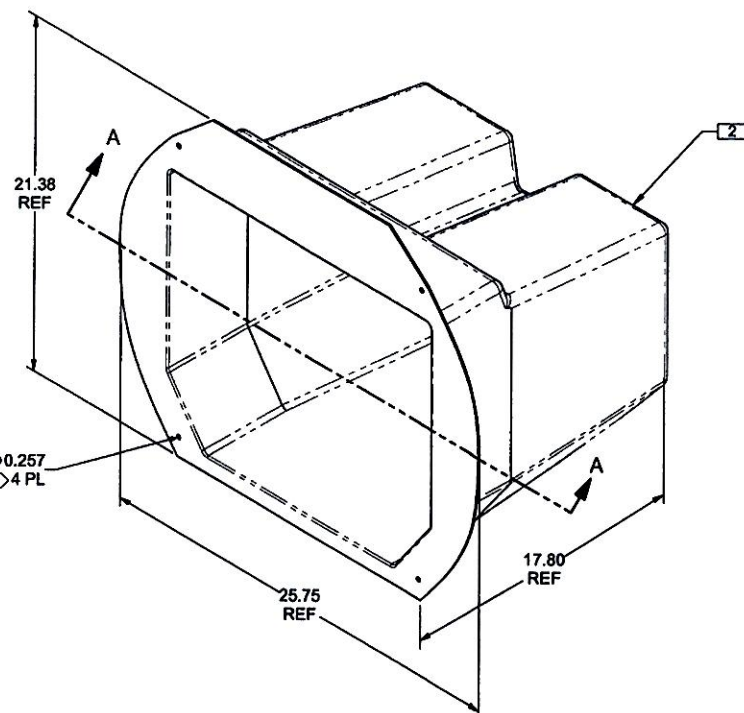
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

TABLE 1

POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
6	7725 FIBER GLASS
7	7725 FIBER GLASS
8	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

TABLE 2



D2273 REAR LOCKER EXTENDER

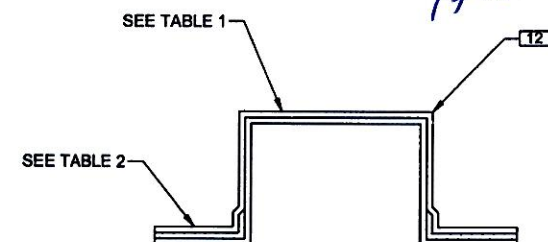
MATERIAL USED	DESCRIPTION
GELCOAT	55X3535 WHITE GELCOAT
FIBER GLASS MAT	OWENS CORNING 3/4 oz CHOPPED STRAND MAT
FIBER GLASS CLOTH	HEXCEL 7725 FIBER GLASS
RESIN SYSTEM	DION 7704
PRIMER	TEMPO 4500-PB-23G (GREEN)

TABLE 3

NOTES:

- 1) MATERIAL: SEE TABLE 3
- 2) FINISH: SEE TABLES 1, 2, & 3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 5.5- 7.5 lbs
- 8) LAMINATE PER DART QSI 006. LAMINATION SCHEDULE PER THIS DRAWING
- 9) LAYUP USING DT9871 MOLD. WET LAYUP WITH BAG/VACUUM
- 10) TRIM & DRILL PER DT9905. OPEN HOLES TO Ø0.257
- 11) CONSTRUCTION: SEE TABLES 1 & 2
- 12) MATTE TO HOLD DOWN CORNERS AS REQUIRED

SHOP COPY
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ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 155142MLJ
17-01-12



SECTION A-A

M	CHANGE GELCOAT TO 55X3535 WHITE GELCOAT, REMOVE PAINT FINISH OPTION (NOTE 2)	DB	16.05.19
L	ADD PAINT OPTION (NCR 15-5408)	CP	15.10.19
K	LAYUP AND MAT'L PER FDC COMPOSITES PROCESS	CP	15.03.12
J	CHANGED GELCOAT TO 4314-001 DURA FR WHITE	ML	13.12.10
I	CHANGE GELCOAT TO POLYCOR 2330PAWK745	SFM	13.08.13
H	CHANGE MATERIAL & MANUFACTURING PROCESS	DC	13.03.15
G	ADD MANUFACTURING OPTION B, ZN B5-1	DC	12.08.08
F	PRIMER LE 3404-S/LE 1175-S WAS 1144-S, ZN A8-1	DC	12.02.27
E	CHANGED SURFACE FINISH FROM 944W005 GELCOAT TO 2330PAWK745 GELCOAT, ZN A7-1. UPDATED DWG TO CURRENT STANDARDS.	DC	12.02.02
D	REMOVE EPOCAST, ADD SURFACE FINISH	CP	02.04.01
C	CLARIFY MATERIAL, LAYUP, AND TOOLING	RF	02.01.30
B	RE-DRAWN	MM	08.05.27
REV.	DESCRIPTION	BY	DATE

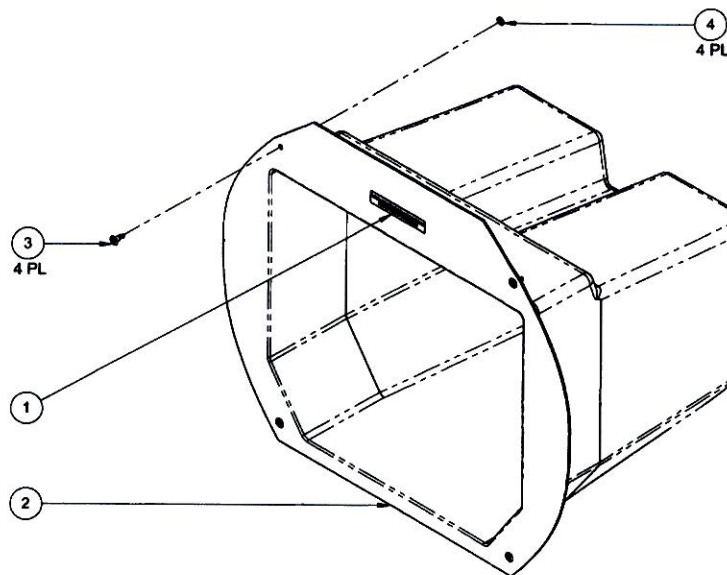
DESIGN	JB	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ML		
MFG. APPR.	DD	DRAWING NO.	REV. M
APPROVED	WM	D2273	SHEET 1 OF 1
DE APPR.	DS	TITLE	SCALE
DATE	16.05.19	350 REAR LOCKER EXTENDER	NTS

RELEASED
2017-01-11
ECN 17-501

APPROVED

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ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
	X	D350-604-041	REAR LOCKER EXTENDER ASSEMBLY
1	1	D2268	PLACARD
2	1	D2273	REAR LOCKER EXTENDER
3	4	2600-6	CAMLOCK STUD
4	4	2600-LW	RETAINING WASHER



D350-604-041 REAR LOCKER EXTENDER ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 5.5 to 7.5 lbs
- 8) INSTALL D2268 PLACARD IN LOCATION SHOWN, CENTERED ON FLANGE

C	REMOVE D2728-1, D2729-1 DECALS (ZN C5-1)	ML	13.12.16
B	INCORPORATE OSI 9470 (ZN D7-1), UPDATE DWG TO CURRENT STANDARDS. ADD D2728-1 PLACARD AND ORIENTATION NOTE (ZN C3-1). ADD D2729-1 (ZN C5-1).	DC	12.02.07
A	NEW ISSUE	CP	02.04.01
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D350-604-041	SHEET 1 OF 1
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	RLE ASSY	NTS
DATE	14.01.02	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

10

10

Description: REAR LOCKER EXTENDER

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to understand the preferences and behaviors of potential customers. Once a need is identified, the next step is to develop a concept that addresses this need. This concept should be unique, valuable, and feasible. The third step is to create a prototype of the product. This allows the team to test the concept and make necessary adjustments. The fourth step is to conduct a feasibility study, which assesses the technical, financial, and operational viability of the product. Finally, the product is launched into the market, and the team monitors its performance and customer feedback to make further improvements.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34974**

Purchase Order Date 1/17/2017 9:06:51 AM
PO Print Date 1/31/2017

Page Number 2 of 3

Order From : VC-FDC01
FDC COMPOSITES INC.
45 CHEMIN DE L'AEROPORT
LOCAL 26
ST-JEAN-SUR-RICHELIEU, QUEBEC J3B 7B5

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 450-357-1344 ext303

Ship To Contact

Ship To Phone

Ship Via: Journey Freight collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

3	D350-604-041P	Rear Locker Extender	9/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			9/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155140
PLEASE NOTE REARLOCKER UNDER NEW REV. M

Line Total: \$705.00

4	D350-604-041P	Rear Locker Extender	9/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			9/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155141
PLEASE NOTE REARLOCKER UNDER NEW REV. M

Line Total: \$705.00

5	D350-604-041P	Rear Locker Extender	9/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			9/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155142
PLEASE NOTE REARLOCKER UNDER NEW REV. M

SPA 9-18

PO Instructions: NOTE: NO BILLING PRIOR TO SHIPPING

Note:

1/31/2017

FDC Composites inc.
45, Chemin de L'Aéroport
Local 26
Saint-Jean-sur-Richelieu (QC)
J3B 7B5
Tel. : 450 357-1344

Shipping Order 29/08/2017

Order : 2676
Reference : PO 34974/1-5

Customer: DAE-CAD

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawksbury, ON
K6A 1K7

Ship To
Dart Aerospace
1270 Aberdeen Street
Hawksbury, ON
K6A 1K7
Tel.: 1 613 632-9577

Item No.	Description	Qty	Qty. Delivere	B/O Qty
D350-604-041P	REAR LOCKER EXTENDER PO item: 34974/5 FDC ID: DAE001-120 Lot: 2017-02-28 As per DWG: D2273 Rev. M B155142 CAD CURRENCY NET 30 DAYS	1		

SEP-9-18

Shipping : _____
Package No : _____
Merchandise Received: _____
Ref. : _____



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CERTIFICATE of CONFORMITY

Customer Name: Dart Aerospace.

Customer P/O Number: 34974

Revision: NC

<u>PO Item</u>	<u>Qty</u>	<u>Part number</u>	<u>Dwg number</u>	<u>Description</u>	<u>Dart ID</u>	<u>FDC ID</u>	<u>Lot</u>
1	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155138	DAE001-115	2017-02-23
2	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155139	DAE001-116	2017-02-27
3	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155140	DAE001-117	2017-02-18
4	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155141	DAE001-119	2017-02-28
5	1	✓ D350-604-041P	D2273 Rev M	✓ 350 Rear Locker Extender	B155142 ✓	DAE001-120	2017-02-28

I hereby certify that the workmanship, material and the processes used in the manufacture of the above part(s) supplied are in accordance with the requirements of the applicable Purchase Order.

Signature:

Marjorie Geoffrion
Marjorie Geoffrion, Quality Inspector

Date: 2017-08-28



Gamme de Fabrication

# LOT	2017-02-28
# SÉRIE(ID)	DAE001-120

Nom de Gamme :	Rear locker extender – DART
# de Gamme (et rev.) :	DAE001 Rev. E
Nom pièce – Client :	350 Rear locker extender – DART AEROSPACE
# de Dessins (et rev.) :	D2273 Rev. J

ID: B155142

Fiche suiveuse

PLAGE (ÉTAPES)	DÉPARTEMENTS	DESCRIPTION GÉNÉRALE	DATE(HR) SORTIE
[10-60]	Préparation	Moule, Espace de travail, Matière premières, Consommables ¹	#23 22-FEV. 2017
[70-90]	Finition/Peinture	Appliquer Gel coat, Inspecter	#3 28 FEV. 2017
[100-150]	Laminage	Laminer, Démouler, Inspecter	#23 28 FEV. 2017
[160-200]	Usinage	Percer, Découper, Ébavurer, Inspecter, Sabler	#30 9 MAR. 2017
[210-230]	Finition/Peinture	Primer, Inspection	#3 28 MAR. 2017
240	Expédition	Emballer, Expédier	#8 30-AOÛT 2017

Gamme préparé par :

Guillaume G.Jasmin

Gamme révisée par :

Pascal Seguin

Gamme vérifiée par
(Chefs d'équipe) :

Gamme approuvée par :

Date d'émission :

2017-02-20

Approbation Qualité

Avant de produire le CofC, toutes les étapes et les informations requises des gammes subséquentes reliées à ce produit ont été complétées et remplies

Inspecteur

Qualité

Informations à remplir :

Cases grises pâles

Inspection :

Cases grises foncées

Matières premières

Matériel Requis (Nom abrégé)	# de lot	Date d'expiration	Spécification et/ou identification
Résine	1028612	2018-05-17	Dion 7704
Norox (Résine)	411049	2017-08-01	MEKP-9
Norox (Gel coat)	411049	2017-08-01	MEKP-9
Gel coat blanc	702284	2017-03-20	55X-3535
Mat ¾ oz/pi²	5051100174	N/A	¾ oz Chopped Strand Mat (Owens Corning Or Equivalent)
Fibre de verre 7725	4294874	N/A	Hexcel 7725 Fiber Glass
Apprêt (Primer) (Vert)	18316	2018-05-01	Tempo 4500-PB-23G (Vert)
Durcisseur pour apprêt (hardener)	18317	2018-05-01	Tempo 4500-C-23
Attache mécanique (Camloc)	508980	N/A	2600-5
Rondelle de retenue pour Camloc	1745658	N/A	2600-LW

Équipement	Matériel auxiliaire	Santé et sécurité
Moule : MOU306 ou MOU309	FMS	Sarrau
Pompe à vide	55NC	Lunettes de sécurité
Jig de découpe et perçage : GAB350	Peel ply	Soulier de protection
Jig de finition et d'inspection : GAB355	Film perforé	Gants
	Bleeder breather	Masques à cartouches
Pince pour installer Camloc : OUT951	Bag big blue	
Outil pour installer rondelle de retenue : OUT952	Ruban scellant (Dum Dum)	

Documents auxiliaires
Annexe 1
Formulaire de résine (RES-DAR001)

MPS	Description
MPS-300-93-31-007-NC	Démoulage 55NC
MPS-300-93-31-058-A	Composite part inspection
MPS-300-93-31-020-B	Edge finish after trimming
MPS-300-93-31-097-NC	Epoxy - Polyamide primer
MPS-300-93-31-084-NC	Protection et entreposage des pièces

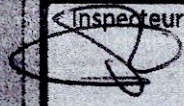
Suivi des révisions

# de révision	Contenu (et étape) de la révision	Date de révision	Révisé par :
A	Révision d'une OP inspection, Ajout nouveaux moules et retrait d'un type de primer	2015-03-04	Guillaume G.Jasmin
B	Ajout des conformateurs, du gabarit GAB355, de l'installation des camlocs, inspection du poids et identification finale	2015-03-25	Guillaume G.Jasmin
C	Mise à jour de la case approbation qualité page 1	2015-04-02	Guillaume G.Jasmin

Opération	Description	Références, outils et équipements	Date et Initiales
Section A : PRÉPARATION			
10	<u>Remplir les informations requises sur la première page (cases grises pâles)</u> - Demander au coordonnateur de production (ID) - Inscrire les heures et les dates d'entrée et de sortie de département		#21 23 FEV 2017 #23 22 FEV 2017
20	<u>Découper la fibre et les périssables (Peel ply, sac étanche...) selon l'ANNEXE 1</u> - ACHEMINER et REMPLIR la section « Matière premières » pour : - Fibre de verre 7725 - Mat ¾ oz	Annexe 1	#21 23 FEV 2017 22 FEV 2017
40	<u>Préparer la résine selon RES-DAR001 (Gamme de formulation de résine)</u> ACHEMINER et REMPLIR la section « Matière premières » pour : - Résine - Norox	RES-DAR001	#28 28 FEV 2017
50	PRÉPARER le moule - Cochez le moule utilisé : MOU306 ☒ , MOU309 ☐ ☒ Nettoyer et traiter le moule ☒ Poser le Masking tape <u>Si nécessaire, traiter le moule au 55NC</u> Faire le test de pelage, s'il ne passe pas, appliquer une couche de 55NC et refaire le test.	Annexe 1 MOU306 ou MOU309 MPS-300-93-31-007	#26 27 FEV 2017

60	PRÉPARER l'espace de travail (pendant l'application du gel coat)			#21 28 FEB 2017 #23 28 FEB 2017	
	☒ Vérifier et préparer la pompe ☒ Préparer et distribuer les outils ☒ Protéger l'environnement de travail (tables, plancher, etc.) ☒ Vêtir l'équipement de protection personnel ☒ Partir la ventilation ☒ Vérifier l'ordre et la présence de tous les plis de fibre et des morceaux de noyau dans le sac				
	Position	Matériel			Initial employé
	10F	¾ oz Chopped strand MAT			leoni NF
	20F	7725 Fibre de verre			leoni NF
	30F	7725 Fibre de verre			leoni NF
	40R	7725 Fibre de verre			leoni NF
	50C	Noyau DIAB F40 1/8po			leoni NF
	60R	7725 Fibre de verre			leoni NF
	70R	7725 Fibre de verre			leoni NF
80F	7725 Fibre de verre	leoni NF			

Section B : APPLICATION GEL COAT

70	(GEL COAT) : ACHEMINER et REMPLIR la section « Matière premières » pour : • Gel coat			#28 28 FEB 2017		
80	APPLIQUER le Gel coat (18 - 22 mils) <table border="1" style="width: 100%;"> <tr> <td>Heure d'application</td> <td>08 h 33 min</td> </tr> </table>		Heure d'application	08 h 33 min	Annexe 1	#3 28 FEB 2017
Heure d'application	08 h 33 min					
90	<u>Point d'inspection (Inspecteur Qualité) :</u> ☒ Épaisseur du gel coat : 18 - 22 mils ☒ Qualité de l'application du gel coat : Uniforme et esthétique.			Inspecteur  Qualité 201-702-28		

Section C : LAMINAGE

100	Points d'inspection (Inspecteur Qualité ou Chef d'Équipe) : ☐ Donner l'approbation pour que la pièce puisse être laminée (le gel coat est « amoureux » ou « tack free »)		Inspecteur  Qualité																														
110	LAMINER <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Position</th> <th style="width: 60%;">Matériel</th> </tr> </thead> <tbody> <tr><td>10F</td><td>¾ oz Chopped strand MAT</td></tr> <tr><td>20F</td><td>7725 Fibre de verre</td></tr> <tr><td>30F</td><td>7725 Fibre de verre</td></tr> <tr><td>40R</td><td>7725 Fibre de verre</td></tr> <tr><td>60R</td><td>7725 Fibre de verre</td></tr> <tr><td>70R</td><td>7725 Fibre de verre</td></tr> <tr><td>80F</td><td>7725 Fibre de verre</td></tr> </tbody> </table> CONSOMMABLE <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>10F</td><td>Peel Ply</td></tr> <tr><td>20F</td><td>Release film non perforé</td></tr> <tr><td>30F</td><td>Bleeder / Breather</td></tr> <tr><td>50F</td><td>Bagging bleu</td></tr> </tbody> </table> ☐ S'assurer que tous les plis dans le tableau ont été laminés ☐ S'assurer que tous les conformateurs (Qte 9) sont en place par-dessus le Bleeder/Breather <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 40%;">Heure début laminage</td> <td style="width: 60%;">9 h 00 min</td> </tr> <tr> <td>Heure mise sous-vide (sac scellé)</td> <td>9 h 45 min</td> </tr> <tr> <td>Intensité du vide (25 inHg)</td> <td>25 inHg</td> </tr> </tbody> </table>	Position	Matériel	10F	¾ oz Chopped strand MAT	20F	7725 Fibre de verre	30F	7725 Fibre de verre	40R	7725 Fibre de verre	60R	7725 Fibre de verre	70R	7725 Fibre de verre	80F	7725 Fibre de verre	10F	Peel Ply	20F	Release film non perforé	30F	Bleeder / Breather	50F	Bagging bleu	Heure début laminage	9 h 00 min	Heure mise sous-vide (sac scellé)	9 h 45 min	Intensité du vide (25 inHg)	25 inHg	Annexe 1 GAB356 à GAB364 (Qte 9)	#19 28 FEV 2017 #26 28 FEV 2017 #21 28 FEV 2017 #23 28 FEV 2017
Position	Matériel																																
10F	¾ oz Chopped strand MAT																																
20F	7725 Fibre de verre																																
30F	7725 Fibre de verre																																
40R	7725 Fibre de verre																																
60R	7725 Fibre de verre																																
70R	7725 Fibre de verre																																
80F	7725 Fibre de verre																																
10F	Peel Ply																																
20F	Release film non perforé																																
30F	Bleeder / Breather																																
50F	Bagging bleu																																
Heure début laminage	9 h 00 min																																
Heure mise sous-vide (sac scellé)	9 h 45 min																																
Intensité du vide (25 inHg)	25 inHg																																
120	LAISSER POLYMÉRISER la pièce sous vide pendant 2h		#19 8 FEV 2017 N/A																														

130	<u>DÉMOULER et IDENTIFIER la pièce</u> ☒ Brancher le système d'air comprimé ☒ Écrire le numéro de pièce et la date sur un collant – # de lot (date de début) – # de série ID Ex : (AAAAMMJJ) – (DAE001-XXX) ☐ Découper une pellicule de plastique protecteur bleu et la coller sur le rebord et à l'intérieur de la partie blanche (Gel coat) (Voir Annexe 1) ☒ Placer la pièce sur la table d'inspection	Annexe 1	#26 28 FEV. 2017 #19 28 FEV. 2017
140	☒ Identifier la présence de surplus de résine ☒ Identifier la présence de bulles d'air ☒ Identifier la présence de zone sèche ☒ Identifier la présence de plis dans la fibre	MPS-300-93-31-058	Inspecteur  Qualité 28 FEB 2017
150	<u>Nettoyer le moule</u> - Enlever la résine durcie tout le tour du moule avec une spatule en plastique pour ne pas endommager le moule <u>Si nécessaire</u>, nettoyer le moule avec un chiffon légèrement humecté de nettoyant à moule (PMC) NE PAS TROP APPLIQUER DE "PMC"	Spatule en plastique	#19 28 FEV. 2017 #26 28 FEV. 2017

Section D : USINAGE

160	<u>PERÇAGE ET DÉCOUPE :</u> INSTALLER le Gabarit de perçage et découpe PERÇER la pièce - Perçer 4 trous avec un forêt F (Dia. .257 po) au travers des canons de perçage du Gabarit GAB350 DÉCOUPER la pièce - Retirer le Gabarit de découpe une fois terminé	GAB350 Annexe 1 Forêt F (Dia. .257 po)	#30 9 MAR. 2017
170	<u>SABLAGE :</u> INSTALLER le Gabarit de finition et d'inspection GAB355 SABLER la pièce jusqu'à arriver à la dimension du Gabarit GAB355 (voir Annexe 1) RETIRER le Gabarit	GAB355 Annexe 1 MPS-300-93-31-020	N/A A

	ÉBAVURER les arêtes vives		N/A 21
180	<u>Point d'inspection (inspecteur qualité) :</u> ☒ Plier les flanges (rebords) afin de s'assurer que le Gel coat ne craque pas (Voir Annexe 1 pour ce test) ☒ Vérifier la conformité de la pièce (Dimensions) selon le no. de dessin et selon le MPS-300-93-31-058	Annexe 1 MPS-300-93-31-058	Inspecteur Qualité 20170316

190	SABLER légèrement l'extérieur de la pièce Papier 120 à 320 grains		#26 14 MAR 2017
200	NETTOYER les surfaces extérieures		#3 MARS 28 AVR 2017

Section E : FINITION/PEINTURE

210	APPLIQUER le primer 2 couches d'environ 10 mils chacune	MPS-300-93-31-097	#3 MARS 28 AVR 2017
220	INSTALLER les attaches mécaniques (Camlocs) (Qte 4) (voir Annexe 1) - Utiliser les pinces spécialisées (OUT951) pour insérer les Camlocs dans les trous - Utiliser l'outil spécialisé (OUT952) pour installer les rondelles de retenues	Annexe 1 Pince à Camloc (OUT951)	2 MAR 2017 J.M.
230	<u>Inspection finale :</u> - Validation de la finition (pinholes, surface inégale, etc...) - Vérifier s'il y a un panneau de contrôle relié à la pièce - Étamper le carré dans le coin inférieur droit de la première page - Identifier la pièce finale (voir Annexe 1) pour exemple et localisation - Poids de la pièce : <u>6.16</u> (LBS)	Annexe 1 MPS-300-93-31-058	Inspecteur Qualité 20170718

Section F : EXPÉDITION

240	Emballer et expédier	MPS- 300-93- 31-084	#8 30 AOÛT 2012
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Work Order ID 155142

Monday, January 09, 2017 11:29:53 AM

155142

Page 1

Item ID: D350-604-041

Accept

N900040100Setup Start ***NS1***

Revision ID: URF 16-567

Item Name: Rear Locker Extender

Stop ***NS2***Start Date: 8/1/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

DAS 21
9-89Approvals: Process Plan: 21 Date: **JAN 12 2017**

Tooling:

Date:

Run Start ***NR1***QC: 9-89 Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2273

D350-604-041

C U/R

100

Document Control

0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D350-604-041

CHG009

CHG010 DAS 21 see attachment
9-89

DAS

5

9-89

SEP 21 2017

110

PURCHASING

0.00

110

Purchasing

Memo

0.00

Purchasing

Issue P/O: 34974

Description: D350-604-041 Rear locker extender.

Manufacture as per dwg D2273

Supplier: FDC Composites Inc.

Certification of Conformity and process sheet required.

JAN 17 2017

***EXTREME CARE MUST BE TAKEN TO PROTECT THE SURFACES OF
THE REAR LOCKER. THE SURFACES MUST BE SMOOTH AND FREE
FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR
DENTS.***

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE